

ABSTRACT

A polycrystalline thin film B consisting mainly of oxide crystal grains 20 which have a crystal structure of a Type C rare earth oxide represented by one of the formulas Y_2O_3 , Sc_2O_3 , Nd_2O_3 , Sm_2O_3 , Eu_2O_3 , Gd_2O_3 , Tb_2O_3 , Dy_2O_3 , Ho_2O_3 , Er_2O_3 , Yb_2O_3 , Lu_2O_3 , and Pm_2O_3 formed on a film forming surface of a polycrystalline substrate A wherein grain boundary inclination angles between the corresponding crystal axes of different crystal grains in the polycrystalline thin film along a plane parallel to the film forming surface of the polycrystalline substrate are controlled within 30 degrees.